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BUILDING STONES

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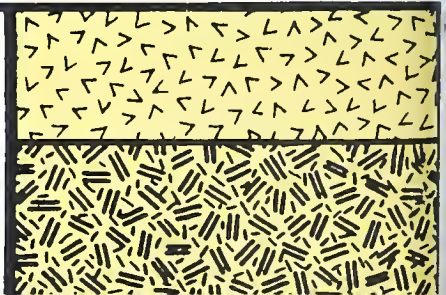
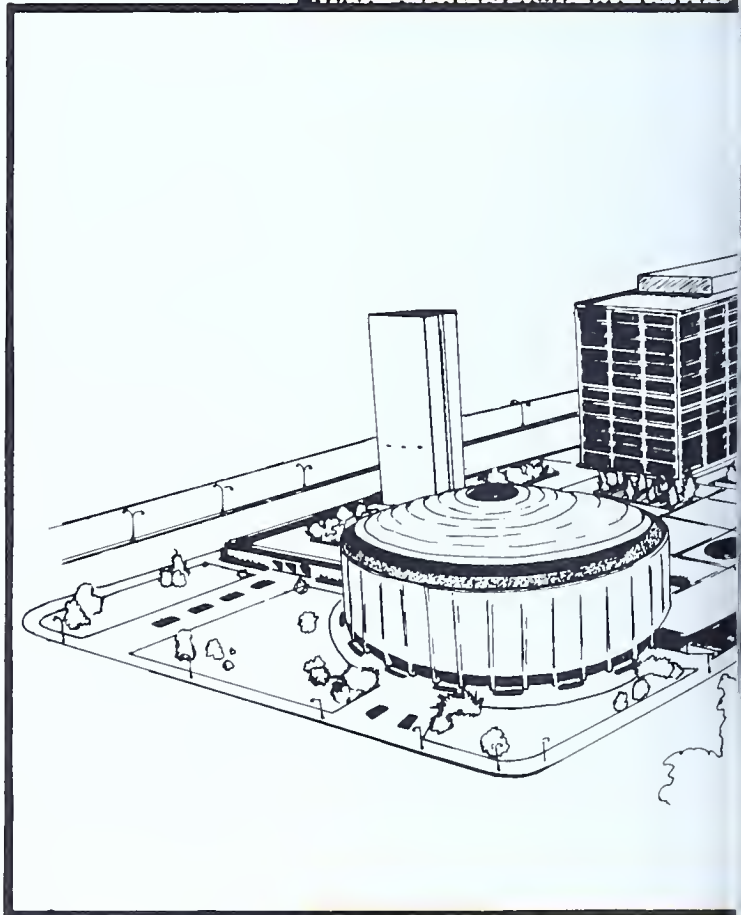
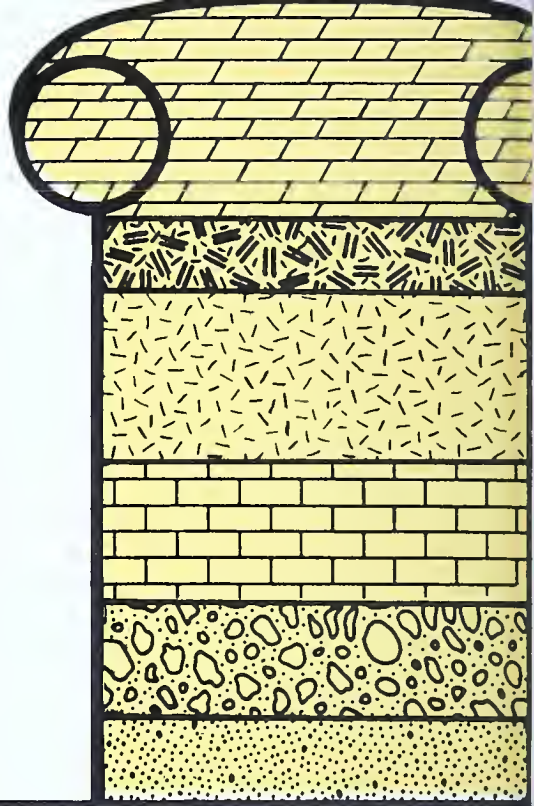
PENNSYLVANIA'S

CAPITAL

AREA

Alan R. Geyer

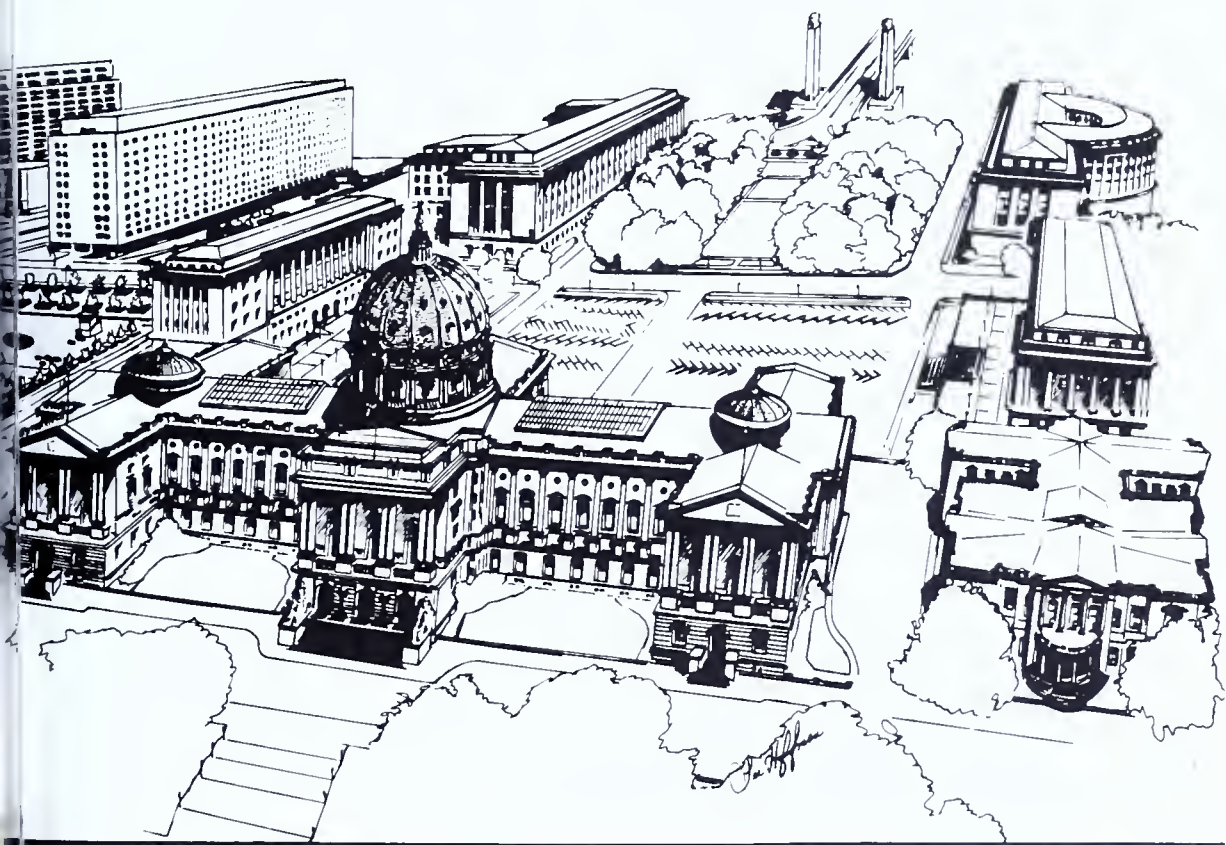
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF
TOPOGRAPHIC AND GEOLOGIC SURVEY
Arthur A. Socolow, State Geologist



Environmental Geology Report 5

BUILDING STONES OF PENNSYLVANIA'S CAPITAL AREA

Alan R. Geyer



PENNSYLVANIA GEOLOGICAL SURVEY
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PREFACE

From the dawn of man's history, stone has served as a primary material for the construction of his shelters and habitats. Over the millenia the workmanship and the selection of stone varieties has demonstrated the advance of mankind's technical skills and esthetic values. With these advances, stone began to travel great distances, even across the seas, as man expressed his preference for building stones far removed from home.

The Greater Harrisburg Region has over the years acquired a tremendous variety of stone types in the construction of its buildings, monuments, and statuary. This is a tribute to the architectural creativity, workmanship, and esthetic qualities of central Pennsylvania citizens. We are pleased to share with you the story and the beauties of some of the stone materials which are now part of the history and the culture of Pennsylvania's capital area.

Arthur A. Socolow

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BUILDING STONES -- INTRODUCTION AND HISTORY

The buildings of Pennsylvania's Capitol Hill and in the Harrisburg area serve as an unusual geologic display, as many of them have been constructed with rocks from throughout the United States and foreign countries as well as from local quarries. Each building on our trip today is an experience in geology and history. The important features of various rocks and minerals will be investigated and you will be able to trace the city's growth and the development of its architecture.

This booklet describes the source and appearance of the stone used in the construction of the Capitol buildings and historic sites in the Harrisburg area. A map (centerfold) and a walking-tour

guide are included to assist the reader. However, before we proceed on our trip, a few general words on building stones and their use in Pennsylvania are in order.

A building stone is judged primarily by three characteristics: 1) it should have a pleasing appearance (color and texture), 2) it should be relatively easy to quarry and work (structure), and 3) it should be durable (hardness, texture, and chemical composition).

The color of a rock is a function of the individual colors of the minerals which make up the rock. This color may change as the rock weathers. Granite composed of white to clear quartz, orthoclase (feldspar), and muscovite (mica)



Union Canal tunnel; oldest tunnel in U.S., built 1825-1827 of local limestone and "brownstone"; North Lebanon Township, Lebanon County.

may appear white, but if biotite (mica) or hornblende are present (more than 5 percent), the granite has a gray color. If the biotite and hornblende are very minor or absent and the feldspar is a bright pink, the granite may appear pink. The red to brown color of the once widely used Gettysburg sandstone is striking. Some of these sandstones have been called "brownstone" from their color. Flagstone quarried in north-eastern Pennsylvania often is called "bluestone," but green and purple tints are also common.

The texture of the rock is also vital to its appearance. Texture is determined by the size, arrangement, and bonding of the mineral grains within the rock. Some granites are composed of mineral grains so small that the texture is like "salt and pepper," whereas others are so coarse that individual crystals may be an inch or more in diameter. Texture and porosity figure into the durability of a rock. A fine-grained, dense rock which does not weather readily is likely to be more durable than a coarse-grained or porous rock.

Hardness often depends on mineral composition. A stone composed almost entirely of quartz is generally harder than one composed entirely of calcite or gypsum. The presence or absence of a natural cement between the minerals will raise or lower the hardness of the rock. Hardness is a major factor in the



Reading Railroad bridge at Second and Hanover Streets, Hummelstown; one of the earliest stone railroad bridges built in the U.S. (1860); local limestone and "brownstone" were used.

selection of stone for floors, walks, and steps that receive continuous wear. A quartz-pebble conglomerate is likely to wear unevenly, and steps of a soft stone such as mica schist are rarely found.

Most building stones show some structure within the rock material, such as bedding planes, crossbedding, schistosity, cleavage, or jointing. These structures may represent lines of weakness, and their concentration and orientation are important in quarrying operations and in the use of the building stone. The width between bedding and joint planes may limit the length and size of the blocks or slabs produced.

Considering the wide distribution of usable building stone in Pennsylvania, it is no wonder that stone buildings are common. In

the early days of our country, especially in the nineteenth century, stone native to the locality was used. Stone buildings are so numerous that if you were to make a map of the stone homes and barns in southeastern Pennsylvania and of the kind of stone in each, it would closely outline the trends of the geologic formations present.

To illustrate this close association between old stone buildings and the local geology, consider the following examples. The Peter Allen House (c. 1725), the oldest stone home in Dauphin County, at the south base of Peters Mountain, was built of blocks of Pocono sandstone from the mountainside. A few miles to the south in the northern part of the Great Valley, homes built of Martinsburg sandstone and siltstone may be found. Adjacent to and south of the Martinsburg Formation are numerous limestone and dolomite "belts." Homes built of these rocks are



Home eight miles east of Harrisburg in Lower Paxton Township, built of Martinsburg sandstone.



Paxton Presbyterian Church (c. 1740), Paxtang Borough, Dauphin County; limestone and dolomite (St. Paul Group) from local quarry.



Peter Allen House (c. 1725) at the foot of Peters Mountain on Pa. Route 225; Pocono sandstone.



Rutherford Spring House (c. 1730), Paxtang Borough; from adjacent quarry in the St. Paul Group.



Hummelstown Area Historical Society building (c. 1815) (former Zion Lutheran Church), Rosana Street, Hummelstown; (Ordovician) limestone and dolomite from local quarries in Dauphin County.

common in Paxtang, Hummelstown, and Hershey. Old stone farmhouses along U. S. Route 322 in southern Dauphin and Lebanon Counties happen to be built very close to the contact between the brown sandstones of the hills to the south of the Great Valley and the valley limestones, and, you guessed it, they are constructed from both rock types.

Within the hills south of Hummelstown and Hershey, brown sandstone homes are common. Waltonville, several miles south of Hummelstown, was the



Home near U.S. Route 322, east of Hummelstown; once a carriage house; limestone and brown sandstone.

site of the world-famous Hummelstown Brownstone Company quarries.

The first use of stone for building in Pennsylvania was in the Philadelphia region, where



Hershey Farm #64 on Old Hershey Road southeast of Hershey; brown sandstone.

some of the earliest homes are still standing. The Caleb Pusey house in Upland, Delaware County, was built in 1683, the year after William Penn landed, and an old Chester County courthouse built in 1724 of local gneiss is still being used today.

The settlement of Pennsylvania from Philadelphia to Harrisburg can be marked and dated by stone buildings: the Daniel Boone (1730) and the Mordecai Lincoln (1733) homesteads near Birdsboro, Berks County; Zeller's Fort (1745) near Sheridan, Lebanon County; and the John Harris Mansion (1766) in Harrisburg are typical of this early westward movement.

Stone buildings are numerous in Harrisburg and Dauphin County due to the availability of



Daniel Boone's Homestead in Guilford, Pennsylvania. Built with the same brownstone siltstone



John Harr's Mansion, 219 North First Street in Harrisburg, Pennsylvania. Built by the Paul Group from South Harrisburg

desirable building stone. Early settlers in the area built their homes, barns, and fences by hand

with local rocks: limestone from the Cumberland and Lebanon Valleys, "brownstone" from the



Zeller's Fort, Sheridan, Lebanon County; limestone and dolomite (Buffalo Springs Formation).



Limestone quarry along Spring Creek in Hershey, Dauphin County; in 1886, the Zimmerman quarry.

uplands south of the valleys, and sandstone from Blue Mountain to the north. They also transported other desirable stone from throughout Pennsylvania.

Limestone was used extensively for building in Harrisburg and surrounding communities. In the past many quarries had been

opened near the city; one of the largest and oldest was along Spring Creek, near the golf course in Hershey. Quarried here was the light-gray massive limestone of the Annville Formation. Notable buildings in Harrisburg built of local limestone are the Pennsylvania Bar Center (1791) at 401



Pennsylvania Bar Center, 401 North Front Street; once the home of William Maclay; local limestone and dolomite.



Cameron Mansion, 407 North Front Street, local limestone and dovetailed

North Front Street, and the Cameron Mansion (1872) at 407 North Front Street.

During the "brownstone era" (1860-1915) deep-reddish-brown sandstone (Triassic age) was very popular in Pennsylvania. This stone was quarried near Hummelstown from before 1800 until 1928. The Hummelstown Brownstone Company at Waltonville, Dauphin County, two miles south of Hummelstown and 10 miles east of Harrisburg, provided "brownstone" for the B. F. Stevens Memorial United Methodist Church (1907) at Vernon and South Thirteenth Streets.



Hummelstown Brownstone Company quarry, Waltonville, Dauphin County, quarries operated under this company name from 1877 to their closing in 1928; the most prosperous years were from 1908 to 1915.

Several large quarries and numerous stone dressing shops occupied hundreds of acres at



B. F. Stevens Memorial United Methodist Church, Vernon and South Thirteenth Streets; "Hummelstown brownstone."

Waltonville. During the height of production, more than 300 employes and 30 derricks were working. Buildings of Hummelstown brownstone extended from New York to Florida and west to St. Louis, Missouri.

The Tuscarora sandstone of Blue Mountain has been used for stone walls, foundations, and an occasional building in the Harrisburg area. Its pink color and great durability produce a very desirable building stone. A small quarry at the base of Blue Mountain, near Picketown, supplied quartzite for a few buildings in the city. The Olivet Presbyterian Church (1929) at Derry and Kittatinny



Olivet Presbyterian Church, Derry and Kittatinny Streets; Tuscarora sandstone.

Streets is the largest of these structures.

The old Rockville quarries just north of Harrisburg supplied sandstone (from the Montebello Member of the Mahantango Formation) for several residences in the 2900 to 3300 blocks of North Second Street in Harrisburg. This sandstone appears greenish gray to tan with some iron staining, fine grained, and dense. Rough building stone and small-sized flagstone were quarried for about 400 feet across the bedding at the end of Blue Mountain on the east side of the Susquehanna Water Gap.

The Cove Mountain quarry at Perdix supplied light-tan to pink, medium-grained sandstone (from the Pocono Formation) for many



Residence at 2902 North Second Street; Montebello sandstone.

structures in Harrisburg. The Penn Mutual Insurance Company building on Front Street and Otterbein United Methodist Church (1928) are the most notable.

Diabase (also called trap rock and ironstone) is a dark-colored, usually fine-grained, igneous rock that occurs abundantly in southern Dauphin County. Prior to 1917 a quarry operated in this rock along Conewago Creek in Londonderry Township, south of Harrisburg. The foundation and



Penn Mutual Insurance Company building at 2921 North Front Street; Pocono sandstone.



Otterbein United Methodist Church, 310 Peffer Street; Pocono sandstone.

trim stone of the Pine Street United Presbyterian Church (1859) and Civil War Veterans Monument (1869) on Division Street between Third and Fourth Streets (this monument once stood at North Second and State Streets) are built of diabase.

In recent years, granite gneiss and schist from southeastern Pennsylvania have been very popular in the home-building industry. Today this stone is taken great distances for the smallest of homes, but in the past it was used only in large structures in Harrisburg, an appreciable distance from its source. Granite gneiss from a small quarry in Seisholtzville, Berks County, was used in the Christ Evangelical Lutheran Church (1924); mica



Diabase quarry (now filled with water) in Londonderry Township, Dauphin County.



Pine Street United Presbyterian Church, North Third and Pine Streets; trim stone is diabase (Triassic).

schist was used in the building of Our Lady of the Blessed Sacrament Church (1930); and marble from a quarry in southern Chester County was used in the building of the Derry Street United Methodist Church (1906).

From the turn of the century to the 1940's, granite from Vermont and Massachusetts, Italian marble, and limestone from near Bedford, Indiana, were used almost exclusively for Harrisburg's state government buildings. State office buildings built since then display a change in building materials. Minnesota and Georgia granite, Alabama limestone, and Georgia

marble characterize these newer buildings. In our walking tour of Pennsylvania's Capitol buildings, we will describe the building stone, the source of the stone, and a few interesting facts about each building.



Civil War Veterans Monument, Division Street between Third and Fourth Streets; diabase (Triassic).



Christ Evangelical Lutheran Church, 124 South Thirteenth Street; granite from Seisholtzville, Berks County.



Our Lady of the Blessed Sacrament Church, 2121 North Third Street; mica schist from the Philadelphia area.



St. Lawrence Catholic Church, 108 State Street; mica schist from the Philadelphia area.



Derry Street United Methodist Church, Fifteenth and Derry Streets; Cockeysville marble from southern Chester County.

BUILDING STONES FIELD TRIP OF PENNSYLVANIA'S CAPITAL

This field trip is a walking tour of the various kinds of building stones used in the Capitol complex. The tour covers an area roughly bounded by Forster Street on the north, Walnut Street

on the south, the Main Capitol Building on the west, and Seventh Street on the east. The numbers are keyed to the locations on the accompanying map (see center-fold).

1 a. **Name:** Main Capitol Building (exterior).

Location: North Third Street, opposite State Street boulevard.

Building Stone: Vermont granite; a light- to medium-gray biotite granite with a medium-grained texture; the minerals feldspar, quartz, and biotite predominate.

Remarks: The granite is called "Woodbury gray" from the Robeson Mt. quarries of Woodbury Granite Co., Woodbury,

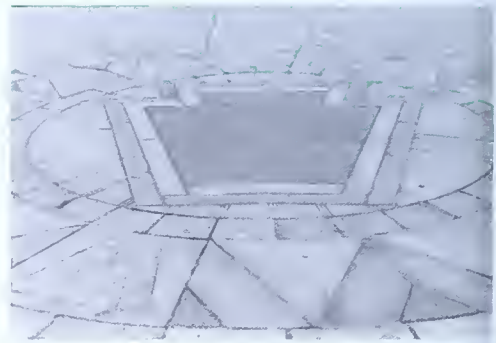
Washington County, Vermont. Dedicated October 4, 1906, by President Theodore Roosevelt. The architect was Joseph M. Houston of Philadelphia. Designed in the classic style adapted from the architecture of the Italian Renaissance. The Capitol is 520 feet long and 254 feet wide. The Capitol dome is 272 feet high and is topped by a figure, symbolic of the commonwealth, upholding a garlanded mace.

1 b. **Name:** Balustrade, stairs, and geometric figures.

Location: Fronting the Capitol plaza.

Building Stone: Massachusetts granite; light-gray to light-pinkish color with a medium to coarse texture; flakes of biotite give the granite a "spotted" appearance.

Remarks: The granite is from the H.E. Fletcher quarry of Westford Township, Middlesex County, near West Chelmsford, Massachusetts.

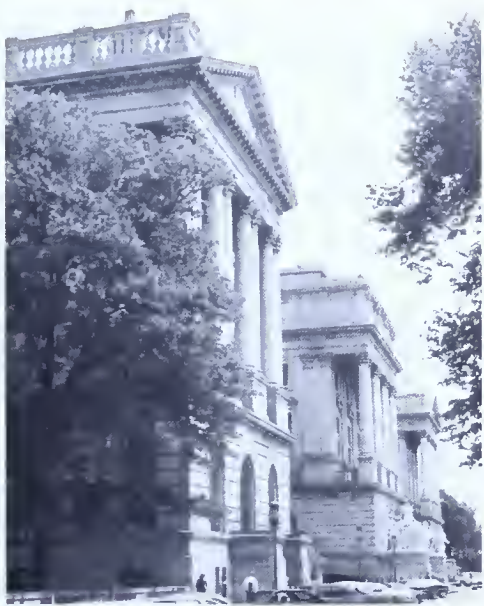


Keystone and compass of multicolored granite inlaid in center of flight of stairs.

Entrance to Center Wing of the Capitol



North (foreground) and south wings of the Capitol.



Geometric figure located at end of long balustrade fronting the Capitol plaza.



Broad flight of stairs leading to Third Street.

1 c. **Name:** Barnard Groups of Statuary.

Location: Right and left of entrance to the center wing of the Main Capitol.

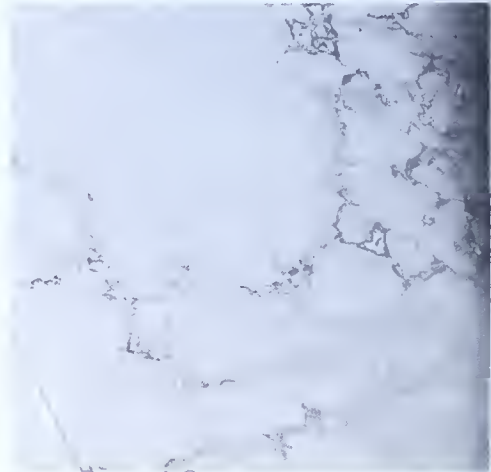
Building Stone: Italian marble, a white porous marble from Carrara, Italy; due to the porosity of the marble and its mineral composition (calcite), weathering is relatively rapid (may be greater than 3 mm per 100 years).

Remarks: The groups of statuary are by the Pennsylvania-born sculptor George Grey Barnard. To the right is a group of men and women in attitudes representing the spiritual burdens carried by man. The group to the left represents humanity advancing through the inspiration of work and brotherhood.

1 d. **Name:** Main Capitol Building (interior).

Building Stones: Center staircase is white Italian marble from Carrara, Italy. The Senate Chamber contains a rare sea-green Irish marble known as "Connemara marble" and "Irish green" from the quarries near Recess County, Galway. This marble is advertised as the least porous of all known marbles. It is a blend of mottles and veining, combining the tones of moss and lichen. The House of Representatives Chamber is furnished in French marble displaying a combination of white,

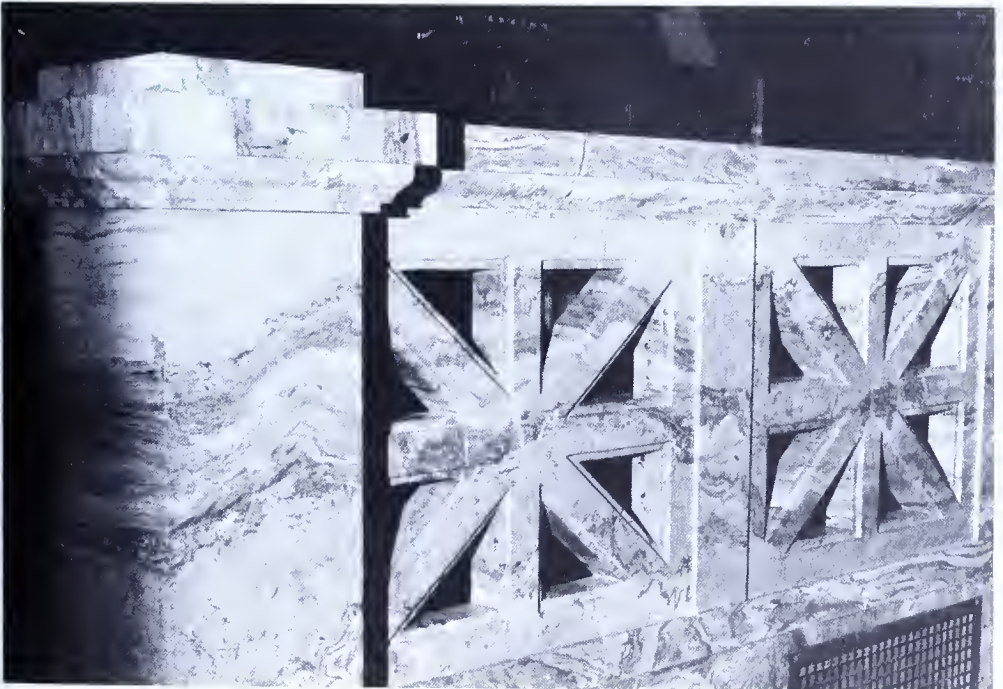
brown, and black colors. This marble was taken from quarries owned by an order of monks in the Pyrenees Mountains. The monks would not sell the marble but, for a Pennsylvania friend, they reopened the quarries and donated it to the commonwealth. It is said that the marble for King Solomon's Temple was brought from these same quarries. The fireplaces in the Governor's reception room are yellowish Sienna marble from Italy. The one in his private office is a red African marble.



A fireplace in the Governor's reception room is yellowish Sienna marble from Italy.



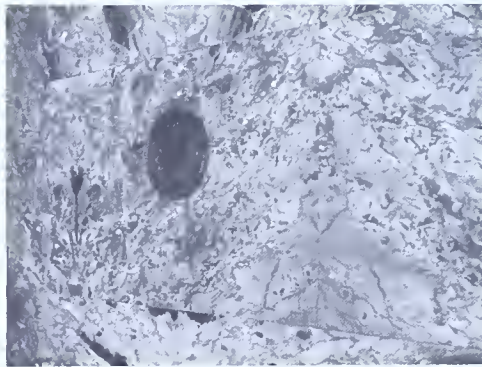
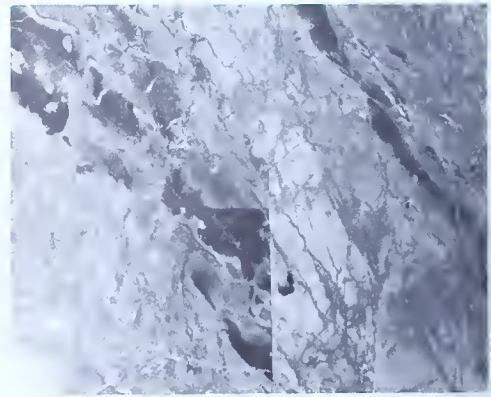
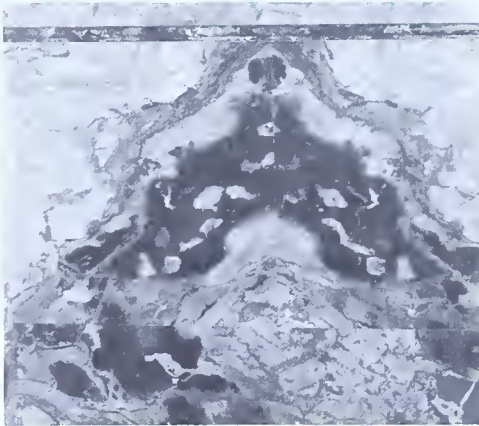
Barnard groups of statuary.



Irish-green Connemara marble in the Senate Chamber.



Irish-green Connemara marble in the Senate Chamber.



French marble in the House of Representatives Chamber.

2. **Name:** Department of Justice Building.

Location: Immediately south of Main Capitol Building.

Building Stone: Indiana limestone exterior; light-tan to buff, composed of rounded "grains" of calcite (oolitic texture); a very firm and compact rock; this stone is extensively quarried and widely used. East steps of the building are sandy, crossbedded Loyalhanna limestone from western Pennsylvania.

Remarks: Building was designed



East steps of Loyalhanna limestone; Department of Justice Building.

by the architect James H. Windrim and was built in 1893-1894 to house executive offices.



Department of Justice Building; exterior of Indiana limestone.

3. **Name:** John Frederic Hartranft Memorial.

Location: In front of Department of Justice Building.

Building Stone: Base of memorial is a red granite with a very coarse texture; individual feldspar crystals in excess of one inch in length occur.

Remarks: Commander of the 3rd Division, 9th Corps, Army of the Potomac.



John Frederic Hartranft Memorial.

4 a. **Name:** Mexican War Monument.

Location: Center of Capitol Park.

Building Stones: Column and cap to base are white marble; steps of diabase; multicolored flagstone covers sloping part of granite base block.

Remarks: Monument commemorates citizens who lost their lives during war with Mexico. Erected by the Commonwealth of Pennsylvania in 1868.



Mexican War Monument.

4 b. **Name:** Boies Penrose Memorial.

Location: Southwest corner of Capitol Park, North Third and Walnut Streets.

Building Stone: Light-gray granite with light-pink feldspar crystals, medium texture.

Remarks: Penrose was United States Senator, 1917-1921; President Pro Tempore of the Pennsylvania Senate, 1889-1891.



Boies Penrose Memorial.

5. **Name:** South Office Building.

Location: Directly east of the Department of Justice Building, on the northwest corner of Commonwealth Avenue and Walnut Street.

Building Stones: Ground floor and foundation of granite, coarse texture with some large (greater than one inch) pink feldspar crystals, overall light-pinkish-gray color; remainder of building's exterior of Indiana limestone, a light-tan to buff, oolitic-textured limestone.

Remarks: Building was authorized in 1919; north and south

elevations have 14 massive Indiana limestone columns, 36'5" long and a maximum of 4'1" in diameter, each weighing 35 tons.

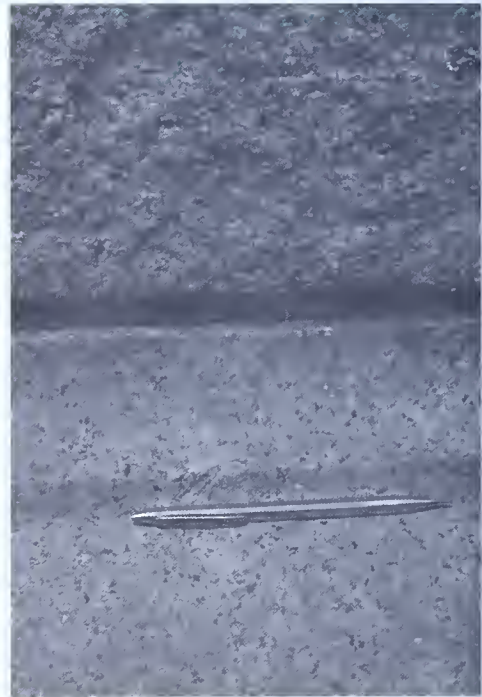


South Office Building, south elevation.



South Office Building, north elevation.

Granite in ground floor of South Office Building; note large feldspar crystals.



6. **Name:** Education Building.

Location: East of South Office Building; northeast corner of Commonwealth Avenue and Walnut Street.

Building Stones: Foundation, steps, plaza around Forum, Massachusetts granite; light gray with a fine- to medium-grained texture; flakes of biotite give the granite a "salt and pepper" appearance. Main building exterior, Indiana limestone; buff color, oolitic texture. Driveway

in front of Forum, granite; medium-gray, coarse texture. Inside the main entrance, the walls and benches of the vestibule and the walls of the main lobby are golden-veined, gray "Formosa marble" quarried in Nassau, Germany. The floor in the vestibule is inlaid with blocks of light-colored Tennessee marble and a medium-brown marble called "Blue Belge." In the main lobby, the floor is a combination of serpentine and "Blue Belge." Opposite the vestibule, the main lobby information desk top is constructed of light-forest-green marble from Vermont, with a base and background of red-lavender "Levanto marble" from Italy. The foyer walls of the Forum are also covered with golden-veined, gray "Formosa marble," and the tunnel-like passageways to the central tier of the auditorium and the wings of the foyer are trimmed with Italian travertine. The prosc-



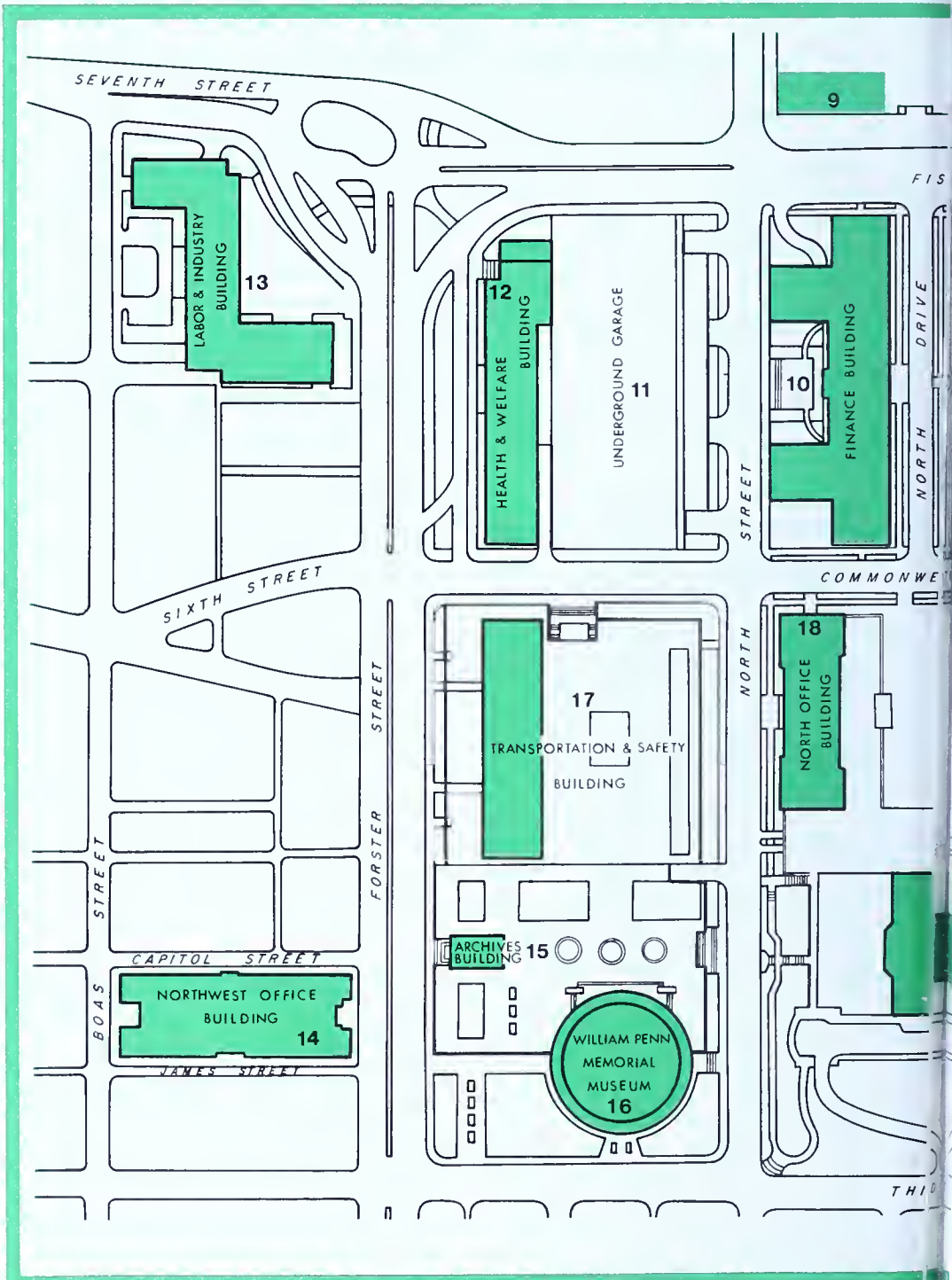
Main entrance to Education Building.

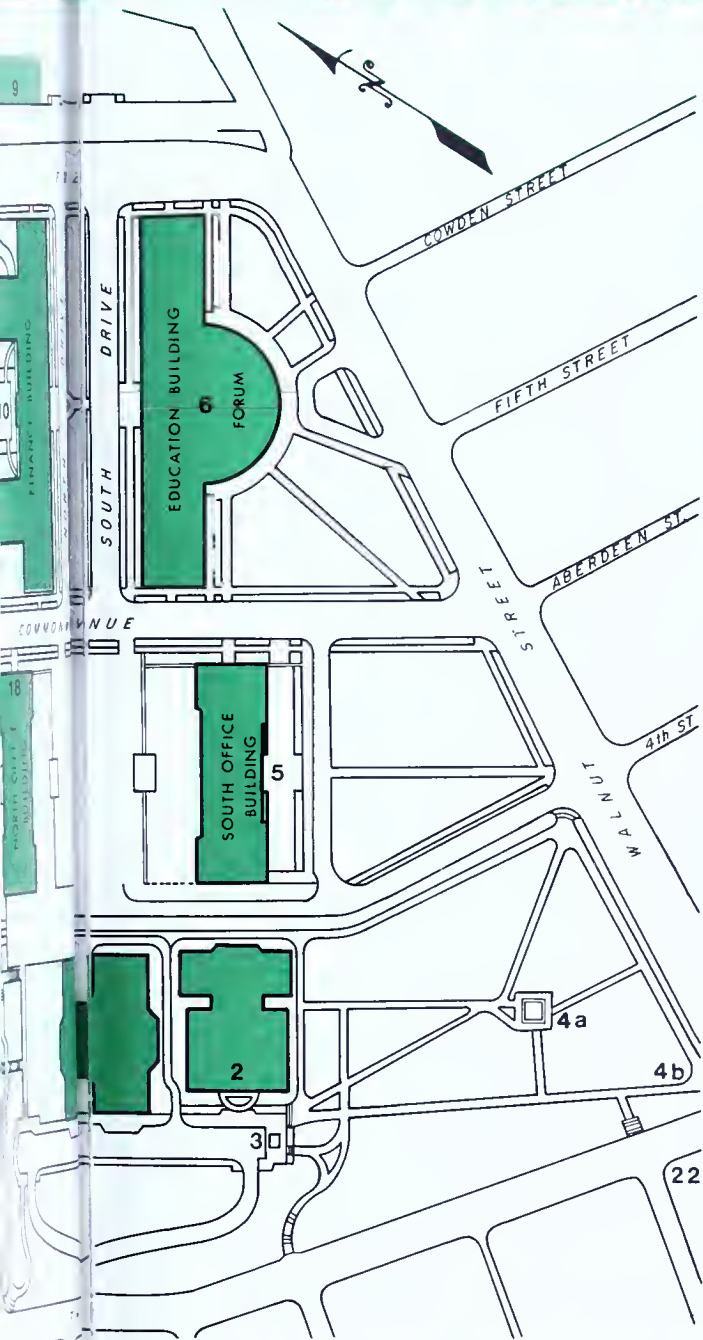


Forum exterior; Indiana limestone.

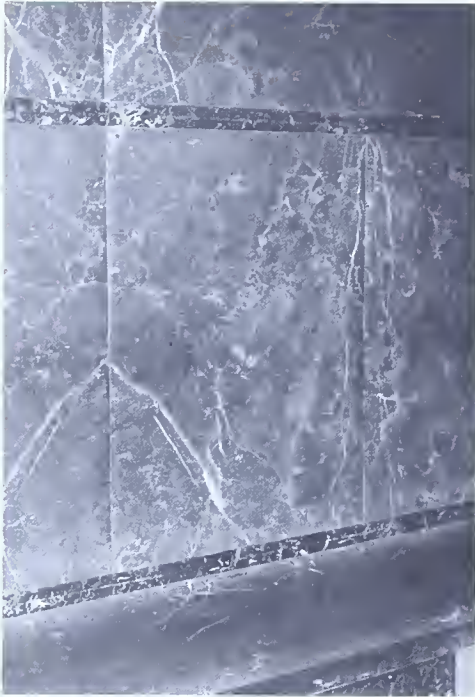


Block driveway in front of Forum is medium-gray granite.

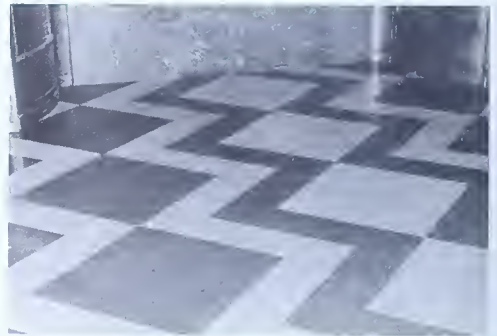




1. Main Capitol Building
 - a. Exterior
 - b. Balustrade, stairs, and geometric figures
 - c. Barnard Group of Statuary
 - d. Interior
2. Department of Justice
3. John Frederic Hartranft Memorial
- 4a. Mexican War Monument
- b. Boies Penrose Memorial
5. South Office Building
6. Education Building
7. Underground Heating and Air Conditioning Plant
8. Soldiers and Sailors Memorial Bridge
9. Capitol Complex Substation
10. Finance Building
11. Underground Garage
12. Health and Welfare Building
13. Labor and Industry Building
14. Northwest Office Building
15. Archives Building
16. William Penn Memorial Museum
17. Transportation and Safety Building
18. North Office Building
19. Zero Milestone
20. Harris Mansion
21. Market Street Bridge
22. Federal Building



Education Building vestibule walls and benches of golden-veined, gray "Formosa marble."

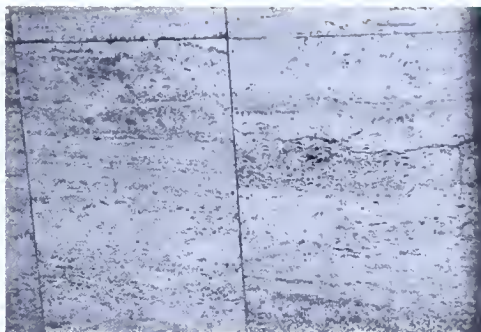


Vestibule floor blocks of Tennessee and "Blue Belge" marble.

Main lobby information desk top of light-forest-green Vermont marble; base and background of red-lavender Levanto marble from Italy.

nium of the stage is of red-lavender "Levanto marble" against a background of beige "Botticini marble" from Italy. This latter type of marble has been used in the hallways throughout the remainder of the building.

Remarks: Building occupied in 1931; contains the Forum, an auditorium seating 1,833 persons; the General State Library, which contains approximately 200,000 volumes; and the Law Library, ranked as one of the most complete in the country. Just below the outside cornice are carved in Indiana limestone the names of 35 educators, philanthropists, and statesmen who have given outstanding



Tunnel-like stairways to Forum auditorium paneled of Italian travertine.

service to education in Pennsylvania. Flanking the main entrance are the coat of arms of the commonwealth and insignia of the Department of Education, sculptured from Indiana limestone by Carl P. Jennewein and Harry Kreis.

7. **Name:** Underground Heating and Air Conditioning Plant.

Location: East end of Court of Honor between the Education and Finance Buildings.

Building Stone: Granite; light

gray with a fine- to medium-grained texture; flakes of biotite give the granite a "salt and pepper" appearance.

Remarks: Completed in 1970; contains the nerve center for central heat and air to Capitol Hill.



Underground Utilities Plant.

8. **Name:** Soldiers and Sailors Memorial Bridge.

Location: On State Street east of Fisher Plaza.

Building Stone: Indiana limestone; light-tan to buff, composed of rounded "grains" of calcite (oolitic texture); a very firm and compact rock; this stone is extensively quarried and widely used.

Remarks: Bridge was authorized as a memorial to Pennsylvania citizens who served in World War I; opened in 1930. West-end pylons are Indiana limestone. Massive sculptures (by Lee Lawrie) at the top of pylons are eagles carved from Indiana limestone. Eagles face the Capitol, stand as guardians of the liberties of the people.

9. **Name:** Capitol Complex Substation.

Location: Immediately north of the Soldiers and Sailors Memorial Bridge.

Building Stones: Foundation, medium-grained light-gray granite; building exterior and wall, Alabama limestone, a buff, coarse-grained, oolitic and fossiliferous limestone.

Remarks: Dedicated 1971; contains the nerve center for the

electric service to the Capitol group of buildings.



Capitol Complex Substation.

10. **Name:** Finance Building.

Location: Southeast corner of Commonwealth Avenue and North Street.

Building Stones: Foundation, steps, plaza north, and north facade are fine- to medium-grained, medium-gray Massachusetts granite with large white feldspar crystals visible; building exterior is Indiana limestone, a buff, oolitic-textured limestone.

Remarks: North facade sculpture (by Lee Lawrie) of granite. Center of sculpture is an adaptation of the state seal; to the right are products used in the daily life of Pennsylvania's citizens; the left symbolizes the natural products of the commonwealth. Building was completed in 1939.



Soldiers and Sailors Memorial Bridge.

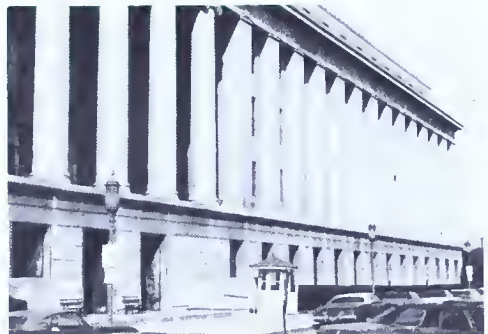
Carved eagles atop pylons at west entrance to bridge.



Sculpture in granite by Lee Lawrie, north facade, Finance Building.



Close-up of left side of sculpture.



Finance Building, south elevation.

11. Name: Underground Garage.

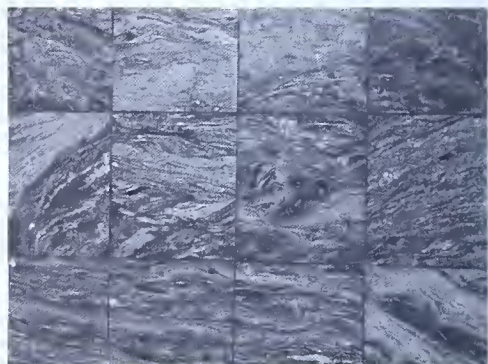
Location: Northeast corner of Commonwealth Avenue and North Street.

Building Stone: Minnesota granite, called "rainbow granite"; pink to medium-red feldspar predominates with black bands of

biotite in highly contorted patterns; a migmatite (complex, multi-generation igneous rock).

Remarks: Each planter on top parking level has been cut and polished from a single block of rainbow granite. Garage has 700-car capacity and was completed in 1959.

Planter, carved from single block of "rainbow granite."



Black bands of biotite with a background of red feldspar give this rock the trade name of "rainbow granite."



Underground Garage; Minnesota granite

12. **Name:** Health and Welfare Building.

Location: Southwest corner of Seventh and Forster Streets.

Building Stones: Exterior, buff, coarse-grained Indiana limestone; columns at base of north and south elevations, Minnesota "rainbow granite" containing pink to red feldspar minerals in sharp contrast to highly contorted, black bands of biotite; foundation, south patio, steps, and Forster Street wall, medium- to coarse-grained granite with large pink feldspar crystals.

Remarks: Building was completed and occupied during the summer of 1957.



Columns of "rainbow granite."



Health and Welfare Building; Alabama limestone exterior.

13. **Name:** Labor and Industry Building.

Location: Northwest corner of Forster and Seventh Streets.

Building Stones: Exterior of buff, coarse-grained Indiana limestone accented by vertical blocks of Georgia marble, a medium-grained calcite marble having swirling bands of pink and white color; columns at main entrance, Minnesota "rainbow granite" containing pink to red feldspar minerals in contrast to contorted black bands of biotite.

Remarks: The main shaft of the 18-story building is 293 feet long, 70 feet wide at the ends, and 78 feet wide at the center,

producing an elliptical convex exterior resembling a long narrow ship. Building was dedicated May 7, 1956.



Labor and Industry Building; Indiana limestone exterior accented by vertical bands of Georgia marble; columns at main entrance, Minnesota "rainbow granite."

14. **Name:** Northwest Office Building.

Location: Corner of Capitol and Forster Streets.

Building Stones: Exterior, Indiana limestone (a buff, medium-to coarse-textured, compact limestone) and cream-colored brick. The foundation, steps, and walls around the building are granite with large pink feldspar crystals and blebs and streaks of biotite. The overall color effect of the granite is pink and black. The large eagles on each side of the building entrance (east) are



Northwest Office Building, south elevation.

carved from Indiana limestone. **Remarks:** Eagles sculptured by Louis Milione; building occupied in 1940.

15. **Name:** Archives Tower.

Location: Southeast corner of North Third and Forster Streets.

Building Stone: Alabama limestone, a buff-brown, coarse-grained, oolitic and fossiliferous limestone.

Remarks: Archives Tower, the William Penn Memorial Museum, and the Transportation and Safety Building are all connected by the Plaza Court area; Tower houses the State Records Center and other offices; 20-story complex.



Archives Tower.



Eagles at east entrance of Northwest Office Building are carved from Indiana limestone.



16. **Name:** William Penn Memorial Museum.
Location: Northeast corner of North and Third Streets.
Building Stones: Exterior of Alabama limestone, buff-brown,

coarse-grained and oolitic. Steps, plaza benches, planters, and edge blocks are Georgia granite, composed primarily of light-gray feldspar and quartz with highly contorted bands of biotite. Main plaza floor and lower-level



Six-story circular William Penn Memorial Museum; exterior of Alabama limestone

walkway around windows are Pennsylvania flagstone of a variety of colors from the northeastern part of the commonwealth. Interior walls are Italian travertine of light- to medium-brown color and extremely porous. The Penn Charter case is limestone conglomerate from Pennsylvania. Large gray limestone and white quartz pebbles in a red-brown matrix produce a spectacular building stone.

Remarks: Travertine is from Carrara, Italy, and the limestone conglomerate comes from the Aungst quarry near Elizabethtown, Lancaster County. Museum was occupied in 1965.



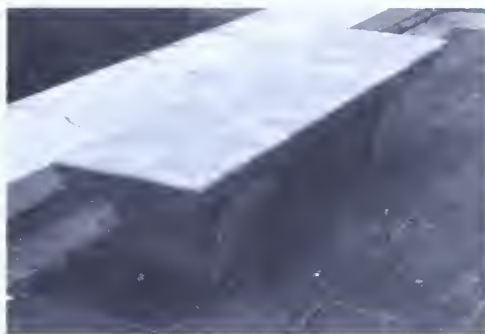
Travertine used extensively in interior of museum building.

Eighteen-foot bronze statue of William Penn; walls and statue base of travertine.





Penn Charter in case of limestone conglomerate.



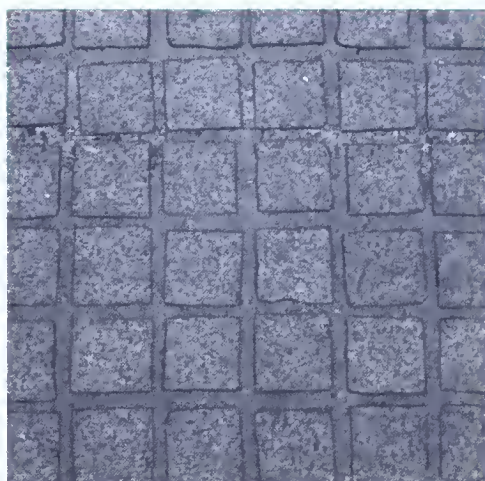
Septon stone in the manner of plinth of granite from Lunenburg, Georgia.

17. **Name:** Transportation and Safety Building.

Location: West side of Commonwealth Avenue between North and Forster Streets.

Building Stones: Plaza Court, coarse-grained dark-gray diorite-syenite with pink feldspar crystals in floor tiles and accent blocks. Stream-rounded pebbles and cobbles mounted in base of fountain on plaza.

Remarks: Building was dedicated July 25, 1967. The newest building in the Capitol complex, it represents the recent trend in building materials--the use of pre-cast concrete facing blocks.



Block of diorite tile up floor of plaza.



Stream pebbles mounted in fountain base on Plaza Court.



Plaza Court and the Transportation and Safety Building.

18. **Name:** North Office Building.

Location: Southwest corner of North Street and Commonwealth Avenue.

Building Stones: Exterior above ground floor, Indiana limestone, light-tan to buff, composed of rounded grains of calcite, even-textured and compact. Exterior of ground floor, steps, plaza along south elevation, and balustrade are Massachusetts granite, light-gray with a medium to coarse texture; flakes of biotite give the granite a "spotted" appearance.

Remarks: North and south elevations have 14 massive

Indiana limestone columns; 36'5" long by 4'1" maximum diameter; sculpture above north elevation is in granite; building was completed and occupied in 1929.



Granite sculpture above entrance to North Office Building, north elevation.

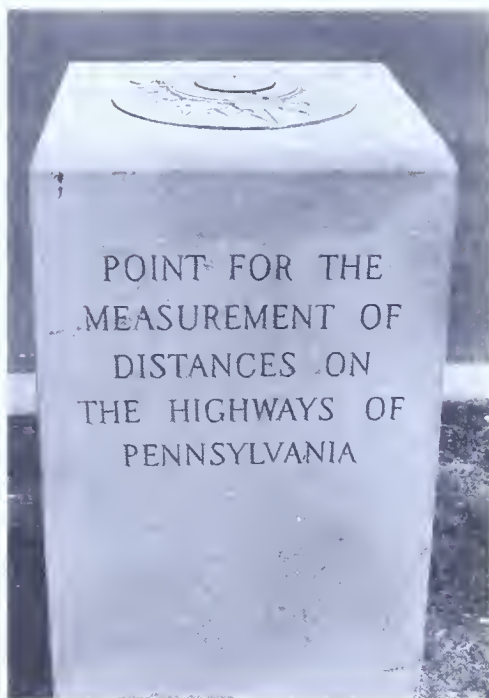


South elevation of the North Office Building.

19. **Name:** Zero Milestone.
Location: Commonwealth Avenue entrance to parking lot at rear of Main Capitol Building.

Building Stone: Granite, medium-grained, large feldspar crystals, light-gray color.

Remarks: This milestone marks the point for the measurement of distances on Pennsylvania's highways; erected by the Motor Club of Harrisburg in 1931.



Zero Milestone.

20. **Name:** John Harris Mansion.

Location: 219 South Front Street.

Building Stones: Limestone and dolomite from local quarries; limestone varies in color from light gray to almost dark gray; fine textured, massive, some stone includes dark-colored wavy laminations or partings; the dolomite is yellow gray, massive, and also contains dark-colored wavy laminations.



John Harris Mansion.

Remarks: Oldest residence in Harrisburg; built by John Harris, Jr., in 1766; a registered National Historical Landmark.

21. **Name:** Market Street Bridge.

Location: Bridge over the Susquehanna River at Market and Front Streets.

Building Stones: Pennsylvania sandstone in superstructure; sandstone is medium to coarse grained, massive, and light brown, often streaked with iron

oxide. Top facing is Indiana limestone, a light-tan to buff, even-textured, compact rock composed of rounded grains of calcite.

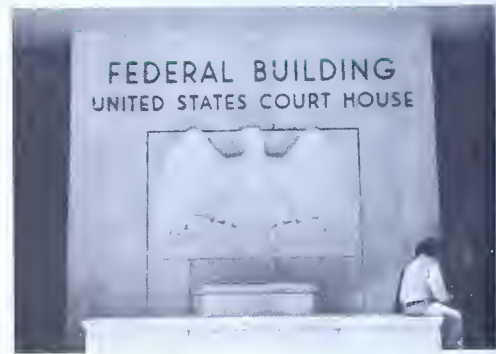
Remarks: Sandstone came from quarries near Curwensville, Clearfield County, and Koppel, Beaver County.

22. **Name:** Federal Building, United States Court House.

Location: Northwest corner of North Third Street and Walnut Street.

Building Stones: Eagle, fine-grained dense Vermont marble; ground-floor facing, green- and orange-streaked white marble, also from Vermont.

Remarks: The first attempt at sculpting an eagle from a block of marble at the Federal Building failed. The Pennsylvania Geological Survey had examined the original marble and found that its failure under the sculptor's tools was a result of its coarse grain size and very small fractures. It was suggested that the sculptor go to Vermont to



Eagle Fountain, Federal Building.

select his marble. This he did; in fact, he sculpted it in the quarry and then shipped it to Harrisburg.



Market Street Bridge over the east channel of the Susquehanna River.

Federal Building, United States Court House.

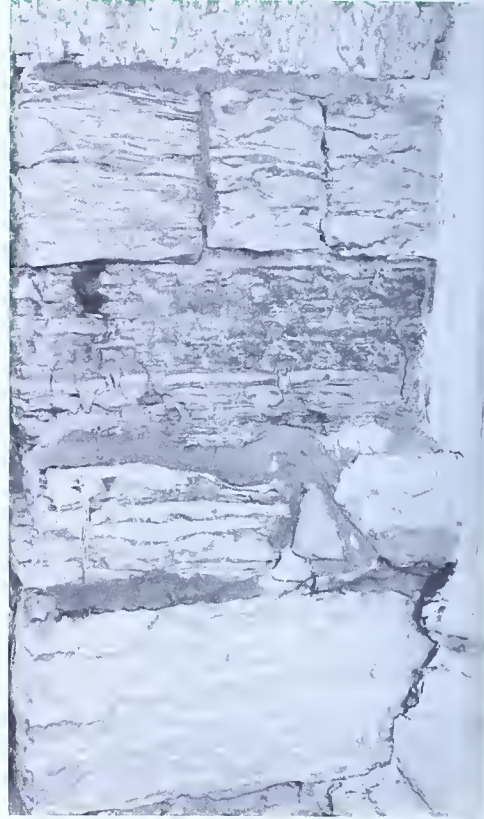


GEOLOGICAL DESCRIPTIONS OF BUILDING STONES USED IN THE HARRISBURG AREA

LIMESTONE (AND DOLOMITE)

Pennsylvania —Dauphin and Lebanon Counties: light-gray (almost white) to medium-gray; usually fine textured, massive; dark-gray wavy laminations or partings are common, includes several formations of Ordovician age. Example: the John Harris Mansion at 219 South Front Street, built in 1766 by John Harris, Jr., the oldest home in Harrisburg.

—Dauphin and Lebanon Counties: yellow-gray to yellow-brown weathered surface, sandy streaks and layers, individual "floating" sand grains, chert blebs, and lenses are common, includes several formations of Cambrian age. Example: the



First Church of Christ Scientist, North Front and Woodbine Streets.



—Cumberland County: medium-gray (often appears blue gray), fine- and even-textured, massive, may include two or more formations of Ordovician age from quarries at Eberly's Mill. Example: homes on Second Street between Wiconisco and Radnor Streets.



Indiana—Bedford, Lawrence County: light-tan to buff; rounded grains of calcite; firm and compact; Mississippian age; crossbedded; Salem Limestone formation. Example: the Education Building at the northeast corner of Commonwealth Avenue and Walnut Street.

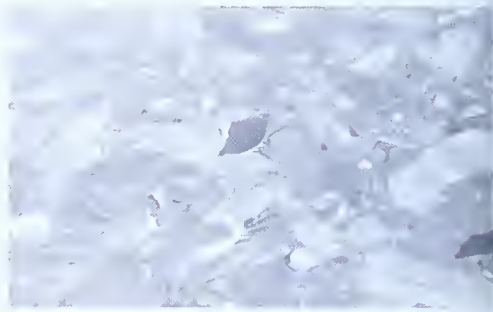


Alabama—Russellville, Franklin County: light-gray to buff-brown, coarse-grained, even-textured, oolitic and fossiliferous; Bangor Limestone of Mississippian age; Rockwood underground mine of Alabama Limestone Division of Georgia Marble Company; "Rockwood Dolite," as it is known in the trade, has been quarried continuously since 1880. Example: William Penn Memorial Museum at the northeast corner of North and Third Streets.



LIMESTONE CONGLOMERATE

Franklinville — Elizabethtown, Lancaster County: predominantly angular fragments of multi-colored limestone and quartzite ranging in size from sand grains to cobbles, cemented together in a red calcareous matrix; the overall gray shade of the stone may vary to a rich reddish brown, known locally as "Lancaster red marble" and in Maryland as "Potomac marble," from the Warren S. Aungst quarry, Triassic age. Ex-



ample: Penn Charter case in the William Penn Memorial Museum.

DIABASE

Conewago — Londonderry Township, Dauphin County: Triassic age; quarry along Conewago Creek operated pre-1917; dark-gray fine- to medium-grained diabase, consisting mainly of labradorite and augite. Example: base and trim stone of Pine Street United Presbyterian Church, North Third and Pine Streets.



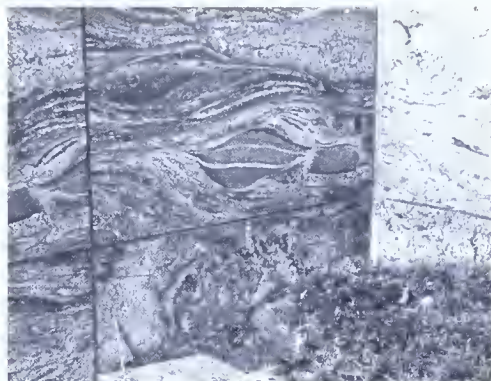
GRANITE

Lithonia — Lithonia, DeKalb County: banded granite gneiss called Lithonia gneiss; highly contorted "bands" or foliation emphasized by arrangement of black flakes of biotite mica; composed primarily of light- to medium-gray potassium feldspar and quartz; a migmatite; Precambrian age; from quarries at Mount Arabia. Example: steps to William Penn Me-

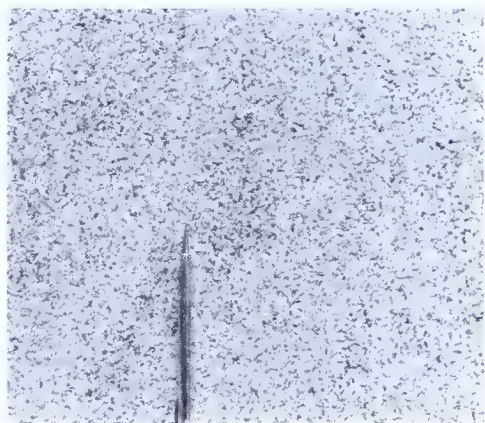


morial Museum and plaza from North Street.

Minnesota—Morton, Renville County: pink to medium-red feldspars predominate, and, together with black biotite "bands" in highly contorted patterns, give this rock the trade name of "rainbow granite"; the Morton granite is a migmatite from the Minnesota River Valley quarries of the Cold Springs Granite Co.; Precambrian age. Example: facing stone of the Underground Garage at the north-east corner of Commonwealth Avenue and North Street.



Vermont—Woodbury, Washington County: Robeson Mountain quarries of the Woodbury Granite Company; commercial name of "Woodbury gray"; biotite granite, light- to medium-gray; medium-grained texture; microcline and orthoclase feldspar, quartz (some light-smoky quartz), biotite, and a little muscovite predominate; mineral contrasts are weak; post-Devonian age. Example: facing stone of Main Capitol Building.



Pennsylvania—Seisholtzville, Berks County: known as the "Byram" granite gneiss; light buff to light pink in color, fine- to medium-grained texture; banded structure is poorly defined, quartz

and microcline feldspar are predominant with 5 to 10 percent hornblende and biotite; Precambrian age. Example: Christ Evangelical Lutheran Church, 124 South Thirteenth Street.

Massachusetts—Westford Township, Middlesex County: very light gray to light-pinkish color, medium to coarse texture; flakes of biotite mica give the granite a "spotted" appearance; from the H.E. Fletcher quarry near West Chelmsford; Precambrian age. Example: the broad flight of steps leading from the Main Capitol Building to Third Street.



MARBLE

Georgia—Whitestone area: medium- to coarse-grained calcite marble; pink color due to manganese oxide; called the Murphy marble; Cambrian age; known as the "Etowah" variety at the Tate quarries in Long Swamp Creek Valley. Example: Labor and Industry Building at the northwest corner of Forster and Seventh Streets.

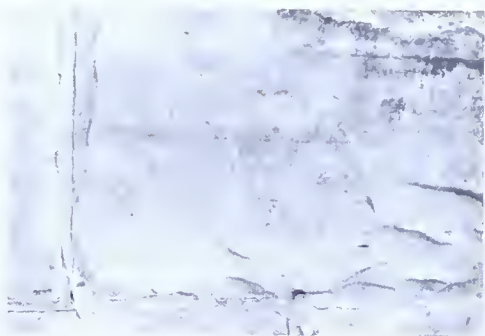


Pennsylvania—Chester County: Cockeysville Formation, Precambrian age; white to light gray, medium texture; commonly a

high-calcium marble. Example: Derry Street United Methodist Church, Fifteenth and Derry Streets.

SANDSTONE

Pennsylvania — Curwensville, Clearfield County: Homewood sandstone of Pennsylvanian age; medium to coarse grained, massive, light brown, streaked with iron oxide, from the Roaring Run quarry. Example: the Market Street bridge over the east channel of the Susquehanna River.



— Waltonville, Dauphin County: Hammer Creek Formation of Triassic age; locally known as "brownstone," sandstone ranges in color from red through light to medium brown, massive, medium to coarse grained; matrix contains varying amounts of hematite; cross-bedding, lensing, and channelling are common; from the Hummelstown Brownstone Company quarry; quarry dates to 1800, operated as above named company from 1877 to 1928; the most prosperous years were 1908

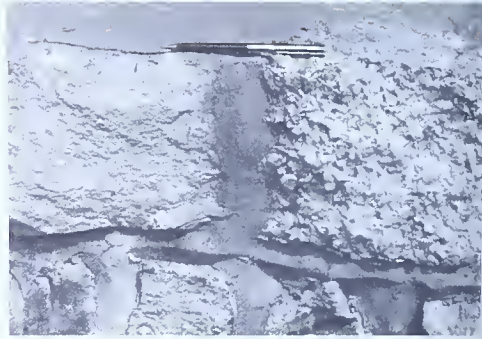


to 1915. Example: B.F. Stevens Memorial United Methodist Church, Vernon and South Thirteenth Streets.

— Rockville, Dauphin County: Montebello sandstone member of the Mahantango Formation, light-live-gray to medium-gray and dusky-yellow, medium-grained,

massive; Middle Devonian age; from the old Rockville Quarry Co. and Robert McCreath and Company quarries. Example: homes in the 2900 and 3000 blocks of North Second Street.

—Perdix, Perry County: Pocono Formation from Core Mt. quarry; Mississippian age; thick-bedded, medium- to coarse-grained conglomeratic sandstone, visible quartz pebbles, light-tan to pink color, small reddish, rusty spots. Example: Penn Mutual Insurance Company building at 2921 North Front Street.



—Piketown, Lower Paxton Township, Dauphin County: Tuscarora quartzite of Silurian age; medium-grained, pale-pink to grayish-red, medium-bedded quartzitic sandstone, small quartz

pebbles visible, iron-stained rusty colored streaks common. Example: Olivet Presbyterian Church, Derry and Kittatinny Streets.

MICA SCHIST

Pennsylvania—Delaware County: Wissahickon Formation of Precambrian age; oligoclase-mica schist, thin- to medium-bedded, coarse-textured; the occurrence of muscovite in relatively large crystals gives the building stone a characteristic shiny appearance. Example: St. Lawrence Catholic Church at 108 State Street.



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